

***ABSTRACT OF THE DISCLOSURE***

The invention is directed to a composite bone graft for implantation in a patient, and methods of making and using the composite bone graft, along with methods for treating patients by implanting the composite bone graft at a site in a patient. The composite bone graft includes two or more connected, discrete, bone portions, and includes one or more biocompatible connectors which hold together the discrete bone portions to form the composite bone graft. The composite bone graft may include one or more textured bone surfaces. The textured surface preferably includes a plurality of closely spaced protrusions, preferably closely spaced continuous protrusions. The composite bone graft is useful for repairing bone defects caused by congenital anomaly, disease, or trauma, in a patient, for example, for restoring vertical support of the anterior and/or posterior column. Implantation of the composite bone graft results in improved graft stability and osteoinductivity, without a decrease in mechanical strength. The composite bone graft does not shift, extrude or rotate, after implantation. The present composite bone graft can be appropriately sized for any application and can be used to replace traditional non-bone prosthetic implants.